

**U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)
Augmented for Sulfur Oxides Review
Public Teleconference
April 22, 2014, 1:00 – 5:00 p.m. (Eastern Time)**

Minutes of the Meeting

Purpose: To review the EPA's draft *Integrated Review Plan for the Primary National Ambient Air Quality Standard for Sulfur Dioxide (External Review Draft, March 2014)*.

Meeting Participants:

CASAC Augmented Sulfur Oxides Review Panel Members (see Roster):

Dr. Anna Diez-Roux (Chair)	Dr. Kazuhiko Ito
Mr. George Allen	Dr. Daniel Jacob
Dr. John Balmes	Dr. Farla Kaufman
Dr. James Boylan	Dr. David Peden
Dr. Aaron Cohen	Dr. Richard Schlesinger
Dr. Alison Cullen	Dr. Elizabeth (Lianne) Sheppard
Dr. Delbert Eatough	Dr. Frank Speizer
Dr. William Griffith	Dr. Helen Suh
Dr. Steven Hanna	Dr. Ronald Wyzga
Dr. Jack Harkema	

Designated Federal Officer: Dr. Diana Wong, SAB Staff Office

Other Attendees: See Attachment A.

Meeting Materials and Meeting Webpage:

<http://yosemite.epa.gov/sab/sabproduct.nsf/MeetingCal/59723D052D872ACF85257C9700693143?OpenDocument>

The materials listed below may be found on the meeting webpage at:

- Agenda
- Federal Register Notice
- Roster, CASAC Augmented for Sulfur Oxides Review
- Charge Memos
- EPA's Integrated Review Plan for the Primary National Ambient Air Quality Standard for Sulfur Dioxide
- Agency Presentation
- Committee Members Comments
- Public Comments

- Registered Public Speakers
- Presentation by Registered Public Speaker
 - *Julie Goodman on behalf of American Petroleum Institute*

Meeting Summary

The discussion followed the plan presented in the meeting agenda.

Dr. Wong convened the meeting and explained that CASAC operates under the Federal Advisory Committee Act. She noted that as required under the Federal Advisory Committee Act (FACA), the Panel's deliberations are held in public with advanced notice given in the Federal Register, and the meeting minutes are made publicly available after the teleconference. The panel chair, Dr. Ana Diez-Roux reviewed the agenda and purpose of the teleconference.

EPA Presentation

Dr. Erika Sasser of EPA's Office of Air Quality Planning and Standards (OAQPS) welcomed panel members. Representatives from OAQPS (Dr. Karen Wesson, Michael Stewart) and the Office of Research and Development (ORD) (Dr. Tom Long) presented the background, schedule, and draft Integrated Review Plan for Sulfur Oxides. Their detailed presentation may be found on the meeting webpage shown above.

Public Comments

As indicated in the List of Public Speakers (posted on the meeting webpage), there was one public speaker. On behalf of the American Petroleum Institute, Dr. Goodman stated that EPA should focus on the weight of evidence instead of whether new information provides evidence of SO₂ effects at concentrations lower than those previously identified. In addition, EPA needs to describe how it will determine when evidence calls a causal association into question. Dr. Goodman's statement can be found posted on the meeting webpage.

Panel Discussion on Responses to the Charge Questions for Review of the Integrated Review Plan

Dr. Diez-Roux led the panel in its deliberations to develop a consensus response to each charge question and discussed clarification and revision of responses where needed.

For Chapter 1 (Introduction) and Chapter 2 (Schedule), panel members noted that the chapters were well written, and provided a good summary of the NAAQS legislative requirements and the review process. A panel member pointed out that while there may not be new studies of SO₂, a lot of new 5-minute monitoring concentrations of SO₂ is available as part of the last rulemaking. Panel members suggested that EPA should evaluate the new 5-minute data and have criteria upfront to decide whether risk and exposure assessment will be conducted. A panel member commented that a footnote in Table 2-1 of the EPA document, which stated an updated REA may not be warranted, is inappropriate and should be deleted.

For Chapter 3 (Key Policy-Relevant Issues), panel members found the policy-relevant questions presented in the chapter to be comprehensive and well-posed.

For Chapter 4 (Science Assessment), panel members found that, overall, the chapter clearly and appropriately described the scope and approach of the science assessment. Members noted that there

may be a lack of recent controlled human and epidemiological studies on SO₂. EPA should summarize relevant “older” human and epidemiological studies and evaluate the older data with regard to sources, exposure conditions related to effects, specific chemical mixtures, and susceptible subgroups. A panel member commented that the document should be clear about the definition of pollutants for review, but need not be limited to just SO₂.

A panel member commented that Figure 4-1 was taken from the Lead Integrated Science Assessment (ISA), and contained welfare assessment. The figure needed to be revised.

For Chapter 5 (Quantitative Risk and Exposure Assessment), panel members found the chapter to be well written, and clearly described the scope and specific issues, including uncertainties. Members strongly supported the use of new data to lower uncertainties in previous REA, and to assess the geographic representativeness of the monitors yielding the new data. Some members also commented that there was a strong need to say upfront that an REA will be conducted, as there is a much larger scope of data. In response to the panel discussion, Karen Wesson from EPA clarified that EPA plans to present ambient air quality data for all sites in the draft ISA. She also clarified that there can be different levels of REA, including partial REA and partial analysis. The panel recommended that there should be clear criteria in the REA Planning Document through which EPA will decide whether a full REA will be carried out. The ISA and the REA (if conducted) should be coordinated. The ISA should include a section that integrates existing data on the effect of exercise on the inhaled dose.

For Chapter 6 (Ambient Air Monitoring), panel members commented that this chapter gave a brief overview of the measurement methods and surveillance network requirements for the SO₂ NAAQS. The EPA requires that a minimum number of “population exposure” SO₂ monitors be installed in urban areas based on the Population Weighted Emissions Index (PWEI) score, while other “source specific” SO₂ monitors have been required by state agencies or voluntarily installed. EPA’s proposed “Data Requirements Rule” will likely require additional “source specific” SO₂ monitors. Panel members discussed the importance of EPA including the PWEI criteria to calculate the minimum number of SO₂ monitors in each Core Base Statistical Area (CBSA). There is probably no new technology for measurement of SO₂ in routine monitoring networks. The panel also discussed the issue of dispersion modeling because the current dispersion model, AERMOD, does not always perform well. Other models may be evaluated as a potential replacement.

For Chapter 7 (Policy Assessment and Rulemaking), panel members found the chapter short, clear and well written. EPA may consider using summary figure that presents a decision tree or flow chart to summarize the process.

The panel chair provided summary of key points for the Letter to Administrator.

Summary of action items

The DFO announced that lead writers should work with their teams to put together draft consensus response to comments and send the draft response to the DFO in 2 weeks (by May 6). Panel members should also finalize their individual comments in 2 weeks. A draft letter to the Administrator will be developed based on the consensus responses to comments. A draft report will be posted on CASAC website. The panel will deliberate on the draft report during the follow-up teleconference on June 11.

Dr. Wong adjourned the meeting.

On Behalf of the Committee,
Respectfully Submitted,

Diana Wong, Ph.D. /s/
Designated Federal Officer

Certified as Accurate:

Ana Diez-Roux, Ph.D. /s/
Chair, Sulfur Oxides Review Panel

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.

Attachment A. Other Attendees

List of persons who identified themselves on the teleconference or who had requested call-in information for the meeting.

Name	Affiliation
Darryl Adams	EPA
Tim Benner	EPA
Roger Brode	EPA
Charles Buckler	EPA
Bridgid Curry	EPA
Amanda Curry Brown	EPA
Rich Damberg	EPA
Matthew Davis	EPA
Dan Deroeck	EPA
Rachelle Duvall	EPA
Joanna Ekrem	Washington State Department of Ecology
Wanda Farrar	EPA
Neil Frank	EPA
Stephen Graham	EPA
James Hemby	EPA
Chris Holly	IHS The Energy Daily
John Jansen	Southern Company
Douglas Johns	National Institute for Occupational Safety and Health
Rick Johnson	Entergy Services
John Langstaff	EPA
Tom Long	EPA
Marcella Nystrom	California Air Resource Board
Stuart Parker	Inside EPA
Privanka Pathak	EPA
Raj Rao	EPA
Sarah Rees	EPA
Irene Shandruk	EPA
Stephanie Shirley	Texas Commission on Environmental Quality
Steven Silverman	EPA
Douglas Solomon	EPA
Holly Stallworth	EPA
Ted Steichen	American Petroleum Institute
Mike Stewart	EPA
James Thurman	EPA
Stephanie Tsao	Argusmedia
John Vandenberg	EPA
Lisa Vinikoor-Imler	EPA
Larry Wallace	EPA
Nealson Watkins	EPA
Karen Wesson	EPA
Linda M. Wilson	NYS Office of the Attorney General
Aaron Yeow	EPA